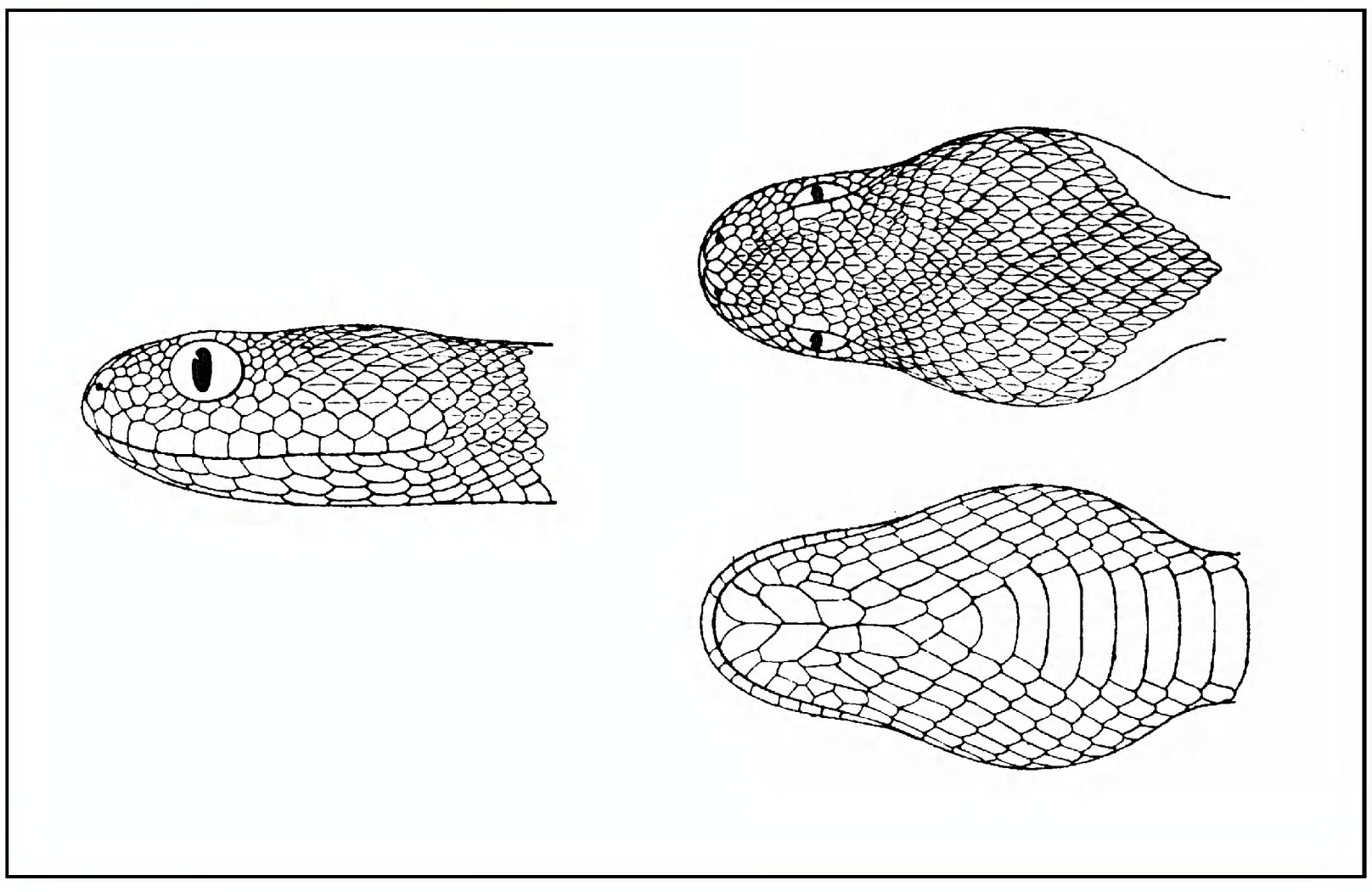
BULLETIN
of the
Chicago Herpetological Society

Volume 45, Number 12
December 2010



BULLETIN OF THE CHICAGO HERPETOLOGICAL SOCIETY
Volume 45, Number 12
December 2010

The Shameful Shell Games Continue . . . . . David S. Lee 185

A Review of: Dorcas, M. E., J. D. Willson and J. W. Gibbons. 2010. *Can Invasive Burmese Pythons Inhabit Temperate Regions of the Southeastern United States?* Biological Invasions. Online at doi 10.107/s10530-010-9869-6 . David G. Barker and Tracy M. Barker 187

Notes on Reproduction of Gray's Chinese Gecko, *Gekko chinensis* (Squamata: Gekkonidae) from Hong Kong, China . . . . . Stephen R. Goldberg 190

What We Missed at the November Meeting . . . . . John Archer 192

Herpetology 2010 195

Unofficial Minutes of the CHS Board Meeting, November 12, 2010 198

Index to Scientific Names of Amphibians and Reptiles for Volume 45 (2010) 199

Author–Title Index for Volume 45 (2010) 201

Advertisements 204

Cover: Saw-scaled viper, *Echis carinatus.* Drawing from *Ophidia Taprobanica or the Snakes of Ceylon* by Frank Wall, 1921.

STAFF

Editor: Michael A. Dloogatch—mdloogatch@chicagoherp.org
Advertising Manager: Ralph Shepstone

2010 CHS Board of Directors

John Archer, President
Linda Malawy, Vice-President
Andy Malawy, Treasurer
Cindy Rampacek, Recording Secretary
Deb Krohn, Corresponding Secretary
Aaron LaForge, Publications Secretary
Mike Dloogatch, Membership Secretary
Dick Buchholz, Sergeant-at-Arms
Jim Foster, Member-at-Large
Lawrence Huddleston, Member-at-Large
Jessica Tschampa, Member-at-Large
Jenny Vollman, Member-at-Large

The Chicago Herpetological Society is a nonprofit organization incorporated under the laws of the state of Illinois. Its purposes are education, conservation and the advancement of herpetology. Meetings are announced in this publication, and are normally held at 7:30 P.M., the last Wednesday of each month.

Membership in the CHS includes a subscription to the monthly *Bulletin*. Annual dues are: Individual Membership, $25.00; Family Membership, $28.00; Sustaining Membership, $50.00; Contributing Membership, $100.00; Institutional Membership, $38.00. Remittance must be made in U.S. funds. Subscribers outside the U.S. must add $12.00 for postage. Send membership dues or address changes to: Chicago Herpetological Society, Membership Secretary, 2430 N. Cannon Drive, Chicago, IL 60614.

Manuscripts published in the *Bulletin of the Chicago Herpetological Society* are not peer reviewed. Manuscripts should be submitted to the editor as email attachments, or on IBM PC-compatible or Macintosh format diskettes or CDs. Alternatively, manuscripts may be submitted in duplicate, typewritten and double spaced. Manuscripts and letters concerning editorial business should be sent to: Chicago Herpetological Society, Publications Secretary, 2430 N. Cannon Drive, Chicago, IL 60614. **Back issues** are limited but are available from the Publications Secretary for $2.50 per issue postpaid.

Visit the CHS home page at <http://www.Chicagoherp.org>.

The *Bulletin of the Chicago Herpetological Society* (ISSN 0009-3564) is published monthly by the Chicago Herpetological Society, 2430 N. Cannon Drive, Chicago IL 60614. Periodicals postage paid at Chicago IL. **Postmaster:** Send address changes to: Chicago Herpetological Society, Membership Secretary, 2430 N. Cannon Drive, Chicago IL 60614.

Copyright © 2010

Bull. Chicago Herp. Soc. 45(12):185-186, 2010

The Shameful Shell Games Continue

David S. Lee
The Tortoise Reserve
PO Box 7082
White Lake, NC 27614
torresinc@aol.com

It's like a perpetual game of Whack-A-Mole, but with ever advancing levels of play

Red-eared sliders are the most frequently sold turtle in the pet trade, due largely to their bright colors. By the 1960s there were over 150 turtle farms operating in the United States. Currently there are 80 turtle farms in Louisiana alone, where they represent a $9.4 million a year industry. In most cases these farms are not self-sufficient, and thousands of additional adult sliders are removed from the wild each year to replace senile breeding stock. This ongoing practice has seriously depleted native populations in many areas of the south. In the mid-1970s the U.S. Food and Drug Administration banned the U.S. sales of turtles under four inches because they found the turtles often transmitted salmonella to small children (Code of Federal Regulations, Title 21, Vol. 8:21CFR1240.62). This was at first devastating to the turtle farmers. Their solution was twofold: overseas sales, and finding markets in the U.S. in states where the regulations were not well enforced. For almost every subsequent attempt at regulation of the industry there was a successful countermove by the farms or the dealers. Today over 200,000 farmed pet turtles continue to be sold in this country each year, and nearly 10 million are shipped to international pet markets.

And to keep it interesting a U.S. senator is attempting to push new legislation to reopen the market for red-eared sliders in the U.S. The bill has already passed the senate and if it goes through the unintended effect will be the mass marketing of turtles in addition to the ones hatched on turtle farms. Eggs taken from the wild will be hatched and the young will be sold in any number of venues: street vendors, pet shops, tourist shops, roadside stands, and of course over the Internet. With this proposed law, imports of turtles hatched from eggs dug up in the wild will enter the U.S. as they will no longer need to reach four inches in length prior to shipment. Countries requiring imported or exported turtles to be captive-bred will be swamped with requests for permits to sell "captive-bred" turtles. CITES regulations will be tested to their limits as exporting countries ship boxes of various protected species as "captive-bred." Dropping the 4-inch requirement for import and sales in the U.S. will have conservation consequences for many species of turtles in many countries.

In addition to the health issues and the devastation of native turtle populations as turtle farms' breeding stock was continually replaced, the commercial trade has resulted in large numbers of turtles being released into areas where they do not naturally occur. These sliders unfortunately are one of the most adaptable of turtles. Having a wide ecological tolerance, by the early 1960s they were becoming established as permanent self-sustaining populations throughout the country. With the shift to overseas markets, these turtles also became established globally. They are on every continent and subcontinent except Antarctica, and even islands like New Zealand, the Bahamas and Cuba now support feral populations of red-eared sliders.

Biologists in European nations soon discovered that the exotic sliders were competing with their native turtles. Not just food but even basking space was important. Researchers demonstrated that European pond turtles when unable to bask, due to displacement from sunning sites by sliders, could not process food, had decreased growth rates, and became even less capable of competing with the aggressive sliders. When the European Union banned the importation of red-eared sliders, the turtle farmers circumvented this and crossbred them with yellow-bellied sliders and shipped their customized, genetically designed young turtles to Europe.

Florida recently stopped the sale of red-eared sliders because released pet turtles were becoming established and were competing with native species, so the turtle farms stocked up on different species to produce young turtles for the market. Over time they too will become problems. As of 1 July 2007, red-eared sliders could no longer be sold in Florida, and after 1 January 2008, it became illegal for non-licensed people to have a red-eared slider smaller than four inches in carapace length. The intent of this regulation was entirely different from that of the federal one. Florida considered red-reared sliders to be injurious wildlife, and became concerned about the numbers of discarded pet turtles being released into the state's aquatic systems. Many states have injurious wildlife laws, but Florida is to be applauded for their use of these laws to take a stand against the commercial sales of red-eared sliders. The IUCN lists this turtle among the 100 most dangerous exotic animals in the world, and many countries are now recognizing the red-eared slider as injurious wildlife. Vietnam this year required a turtle farm in that country to return a shipment of 40 tons of red-eared sliders to the U.S.

I was in Daytona Beach this July and visited a few tourist-focused gift shops along A1A. Besides the tables of T-shirts, racks of bikinis, postcards, knickknacks, seashells, dried starfish and seahorses, and live hermit crabs there were sales displays of "Live Baby Turtles." The turtles all appeared to be fresh-out-of-the-egg hatchlings, though none had an "egg tooth." I wondered if these were mostly last season's hatchlings, held dormant in refrigeration for 9 months or so to be ready for the early summer tourist market, a time prior to when the 2010 hatchlings would be emerging from their eggs. If so, this is a shame, as most, though seemingly healthy now, would succumb to organ failure in the months to come. The turtles were not red-eared sliders, they were combinations of hieroglyphic river cooters and crosses of red-eared and yellow-bellied sliders. A few individuals would be hard to distinguish from pure red-ears, but thus the shops like those in Europe were getting around the ban on red-

ear sales. In fact they weren't sales at all; one needed to purchase turtle set-ups—units of various sizes starting at $18.50 apiece. Technically no turtles were being sold; they were simply given away. The shops assumed there was no regulation against giving the turtles away, so buy the container and other turtle paraphernalia and you get a free turtle. Not a bad business plan considering that the wholesale purchase price of the turtles is about 40–50 cents each. So, what's next, $45 condoms and a cute gal who will show you how they are installed and used free of charge?

The potential ecological impact on native Florida turtles and other wildlife is not only just as bad, but has been increased because of the river cooters. Now there are two genera of introduced turtles Florida needs to be concerned about. While I did not see any map turtles for sale that day, they are another concern, one that can easily slip through the Florida regulations as now written. Based on the hybrid swarms of hatchling map turtles produced and sold by turtle farmers we know that *Graptemys* readily hybridize. Considering the overall range of the genus, and the number of endemic range-limited species of conservation concern occurring along the Gulf Coast, the potential for released pet map turtles to destroy the genetic integrity of a number of species is high. And keep in mind the resulting problems are not restricted to Florida. These turtles are being sold at vacation destinations and will be widely dispersed by visiting tourists. What becomes of the hatching turtles when they out grow their store-purchased habitats, or live past the point that they are of interest to the children for whom they were purchased? These hatchlings will show up in creeks, ponds and lakes all over the eastern United States. And it has started. This summer a false map turtle was found in Maryland—a released pet trade turtle, one that could hybridize with the state's native common map turtle, a species of conservation concern. Yet, they can be sold legally in that state because they are not a native species.

Myrtle Beach, South Carolina, for more than a decade has turned a blind eye to enforcement of state and federal regulations on the sale of hatchling red-eared sliders. I and others have documented a steady input of unwanted sliders turned into reptile rescue centers and dumped into aquatic systems from North Carolina to Pennsylvania. Owners forfeiting red-eared sliders to rescue groups invariably say they were purchased in gift shops in Myrtle Beach. Near major cities in central North Carolina it is almost impossible to find native yellow-bellied sliders without some amount of red on their necks and heads from intergradation with the introduced turtles from the pet trade. Additionally we are now seeing the creative marketing of farmed turtles. The turtle farms can create turtles that will be under the radar of states with laws prohibiting sales of specific taxa, and ones not allowing sales of any native species. The hybrids lack true names and technically are not native to any state. The possibility of new designer turtles was not considered by the agencies writing the regulations. And the take-home message is that our federal government is not concerned if salmonella infected turtles are sold outside the United States and cause health issues for children in other nations. Florida turtle farms are still allowed to breed and sell red-eared sliders outside of the state. Are they unconcerned with the ecological havoc that released pets could cause in other parts of the nation? What about the pollution of aquatic systems shared with states adjacent to Florida?

While many people recognize the problems with simply releasing pets into a local lake, their options are limited. Reptile rescue centers are saturated with unwanted pet red-eared sliders. Each year I turn down several dozen requests from people wanting to find homes for their fast-growing pet sliders. I try to forward them on to people who are into turtle rescues and rehoming them, but most groups will no longer take red-eared sliders. Okay, here is how desperate it is: a decade or so back a consortium of turtle rescue groups got together and found a turtle farm in south Florida willing to take unwanted red-eared sliders. The people shipping the turtles were all well aware that their sliders were going into breeding ponds and the young from these turtles were being put back out on the market. Sort of a circular humanitarian effort I suppose.

Despite a number of exemptions and loopholes it would seem that existing federal statutes would prohibit sales of turtles under four inches to the general public. Selling enclosures with a free baby turtle, while a somewhat of a gray area, would still constitute illegal "public distribution. . . in connection with a business." In the past dealers have tried putting signs over their live turtle displays saying "sales for educational purposes only" but the FDA does not recognize this as a legitimate loophole. The penalties can be considerable: " . . . shall be subject to a fine of not more than $1,000 or imprisonment for not more than 1 year, or both, for each violation, in accordance with section 368 of the Public Health Service Act (42 U.S.C. 217). More consistent enforcement is needed.

So the overriding question is why can't even seemingly straightforward wildlife regulations be written so that their enforcement can be clearly interpreted while retaining their original intent? Commercial interests are quick to find soft spots in the regulations of various agencies, and they seemingly have most new regulations circumvented by the time they go into effect. For example, Florida allows sales of "color-morphs" such as albino and pastel red-ears in the belief that people will not be releasing the high priced captive-bred strains into the wild. I wonder if the genetically blind red-ears offered for sale by a turtle dealer who advertises on the Internet and in *Reptiles* magazine, also qualify as high-end stock? Agency response time, reevaluation of the problem, and drafting and passing revised regulations, even when the problems are addressed, take years. And these are just the sales shop issues; think of what is transpiring over the Internet. Or better yet, take a look. Who is regulating that? It is interesting to see that everyone can get behind conservation initiatives that take aim at direct threats to high profile native wildlife. Killing whales or wolves gets attention, yet indirect threats like habitat loss and the introduction of invasive species, while often of far greater consequence than many of the direct issues, are generally met with complacency both by the public and by government agencies.

Bull. Chicago Herp. Soc. 45(12):187-189, 2010

A Review of: Dorcas, M. E., J. D. Willson and J. W. Gibbons. 2010. *Can Invasive Burmese Pythons Inhabit Temperate Regions of the Southeastern United States?* Biological Invasions. Online at doi 10.107/s10530-010-9869-6

David G. Barker and Tracy M. Barker
vpi@beecreek.net

Here is another article in *Biological Invasions* about pythons with a title posed as a question. The first such article was, of course, that of Rodda et al. (2008). In it a flawed analysis based on a corrupt data set concluded that Indian pythons (*Python molurus*) and Burmese pythons (*Python bivittatus*) would find the climate of the southern third of the continental United States to be suitable for colonization. In this more recent article, which for convenience we will refer to simply as "Dorcas et al." or "Dorcas and others," the authors set out to test the conclusions of the first article.

For readers unfamiliar with Dorcas et al., it can be summarized as follows: in the Introduction, the authors argue that it is really important to test the ability of Burmese pythons currently inhabiting the Everglades National Park [ENP] to survive in more temperate regions. In the Methods section, there is a description of the "semi-natural" large enclosure that included a variety of shelters and refugia and into which ten pythons from ENP were released. The enclosure was located on the grounds of the Savannah River Ecology Lab [SREL] near Aiken, South Carolina. In the Results section, the authors describe how the pythons froze to death. In the Discussion section, the authors describe how the pythons would have survived it the weather had been warmer, the snakes had been smarter, or possibly if the snakes had been from different genetic stock.

The entire text of the article could be summarized in a single word answering the question posed in the title—NO. The article very concisely illustrates that Burmese pythons cannot inhabit at least the area of southern South Carolina. Never has a published article better described how tropical pythons freeze to death in temperate South Carolina. Further, a better title for the article would be "A Clear and Concise Rebuttal of the Analysis and Conclusions of Rodda et al. (2008)."

We note that in Dorcas et al. the word "temperate" is used in the title and 17 places in the text, yet nowhere is the term defined. Do they refer to any locality north of the Tropic of Cancer (23°26′22″N latitude) and south of the Arctic Circle (66°33′44″N latitude), that being the accepted Northern Temperate Zone? Or is it any area that does not experience average winter monthly temperatures below 0°C, or minimum monthly temperatures below 0°C? There are a number of other possible demarcations that we could propose. We can find no universally accepted definition of "temperate" and Dorcas and others do not define their use of the term "temperate." Neither do Dorcas and others define what areas in the USA they consider to be temperate or why. Clearly, however, South Carolina is "excessively temperate" for *Python bivittatus*.

The following sentence is quoted from the text and is the first use of the term "temperate"; as such we would expect that the citations are supposed to support and possibly define the use of the term: "Although large constricting snakes generally live in tropical climates, the native range of *P. molurus bivittatus* extends into temperate regions (Groombridge and Luxmoore 1991; Whitaker and Captain 2004; Zhao and Adler 1993) and recent climate-matching studies indicate that climate suitable for *P. molurus* [*sensu antiquo*] exists throughout much of the southern United States (Reed and Rodda 2009; Rodda et al. 2009)." These are the ONLY references provided by Dorcas et al. that would indicate any justification for the use of the term "temperate."

Looking at the three references in the first half of the sentence, one will find a single use of the term "temperate" in Groombridge and Luxmoore (1991) and its use seems to imply that the authors do not consider *Python molurus* (*sensu antiquo*) to be a temperate species. Whitaker and Captain (2004) do not use the term "temperate" to describe the habitat or ecology of either Burmese pythons or Indian pythons—the term does not occur in either account. Zhao and Adler (1993) do not use the term "temperate" to describe the habitat or ecology of the Burmese python—the term does not occur in the account.

In the second half of the quoted sentence, the mention of Reed and Rodda (2009) and Rodda et al. (2008) refers to their published analyses based on a data set wherein essentially all the northernmost (temperate) weather stations in the study are located outside the ranges of the species. The "studies" are based on a novel and incorrect map, incorrect taxonomy, and flawed data (see Barker and Barker, 2010c).

Dorcas et al. provide no references that define or justify the use of the term "temperate" with regard to the natural distribution of *P. bivittatus*. They make no reference to plant communities, annual temperature regimes, critical winter temperatures, latitudes, or any other criteria to define or justify just exactly to what they are referring with their use of the term "temperate." In fact, other than recent articles written by invasion biologists regarding the presence of *P. bivittatus* in Florida, we can find no instance in herpetological literature where Burmese pythons are described as a temperate species, or as occurring in temperate climates.

Dorcas and others persist in identifying the Burmese python as a subspecies of *Python molurus*, a usage that has plagued many of the publications of invasion biologists. It's not clear why these invasion biologists clearly consider themselves to be superior taxonomists and why their opinions on the classification of the Burmese python should supersede the conclusions of taxonomists published in taxonomic papers in peer-reviewed journals (Jacobs et al., 2009; Schleip and O'Shea, 2010). Other recent authors have accepted this change (Avery et al., 2010; Barker and Barker, 2010a, b, c; Cota, 2010). It has been demonstrated that the use of correct and current taxonomy is of the utmost importance to environmental and invasion biology (Bortolus, 2008).

The change in the classification of the Burmese python, now recognized as the species *Python bivittatus*, constitutes one of

several reasons why the the analyses and conclusions of Rodda et al. (2008, 2009) and Reed and Rodda (2009) are fundamentally incorrect and suspect on many points (Barker and Barker, 2010c). This, in turn, brings into question the basis for and validity of this research—if *P. bivittatus* is not, in fact, a temperate species, then there seems to be little justification for allowing these tropical pythons to freeze.

Regarding the points made in the Discussion: Dorcas and others express surprise that the Burmese pythons in their enclosure did not seem to react to cold temperatures by seeking shelter. This despite previous reports by Barker (2008), Avery et al. (2010), and Mazzotti et al. (2010) that exactly described this inability of Burmese pythons and other large constrictors to correctly estimate and react to the dangers of critically cold temperatures. The authors propose that evolutionary changes to the physiological tolerances of the pythons to cold are possible and support this statement with two references (Hoffman and Weeks, 2007; Bertoli et al., 2010), both of which pertain to fruit flies (*Drosophila*).

Continuing, Dorcas and others then theorize that perhaps thermoregulatory behaviors appropriate to the temperate climate "can evolve relatively rapidly, provided it is a product of heritable behavioral traits" and cite for support the theoretical paper of Angiletta (sic) et al. (2002). There are several problems with this line of reasoning, among which include: (1) The time frame indicated by "relatively rapidly" does not refer to any defined time period and could extend to thousands or millions of years. (2) There is no evidence that the thermoregulatory reaction of large tropical constrictors is a product of heritable behavioral traits. It may be that large constrictors simply cannot overcome their physiological limitations by behavioral changes. After all, the largest constrictors are all restricted to the tropics. (3) Burmese pythons in nature have not expanded their natural range northward in human memory or recorded history. (4) After 30 years living in ENP, Burmese pythons died by the thousands when the weather got cold; three decades and numerous generations of pythons growing up in temperate Florida didn't seem to have created any particular tolerance for a Florida winter cold snap behaviorally or physiologically.

The suggestion of Dorcas and others that Burmese pythons "originating from more temperate localities" than the founders of the Florida population "might" be able to colonize temperate areas of this country is no more than specious and unfounded speculation. Here the authors have committed the logical fallacy of ignoring the question. Ostensibly the question is "can Burmese pythons in the ENP spread into the southern third of the United States, as posed by Rodda et al. (2008, 2009) and Reed and Rodda (2009)?" This they very clearly proved to be highly unlikely, at least in southern South Carolina. The question is NOT "can specifically selected Burmese pythons from elsewhere in the natural range survive in South Carolina?" The question is NOT "does there exist, somewhere in the world, a Burmese python that could live in southern South Carolina?"

Dorcas and others repeatedly state that the winter in South Carolina was "appreciably colder than typical." Nowhere do they mention that it was far from being the record coldest winter—in fact the cold weather was just a regular cold snap of the kind that every few years grips the Southeast. Even as this manuscript is prepared in late November and early December 2010, the low temperatures in Aiken, South Carolina, have been in the range of 20–30°F—lethally cold for Burmese pythons.

There is ample physiological and behavioral evidence to show that the Burmese python cannot survive a more extreme climate than that of south Florida (Avery et al., 2010; Mazzotti et al., 2010; Pyron et al., 2009; and this paper here in review). Technically Florida, located north of the Tropic of Cancer, is a temperate locality—Americans may refer to it as "subtropical" but it is actually located in the Temperate Zone. The northernmost record of Burmese pythons in the natural range is probably the record of Wall (1921) at Dibrugarh, Assam, at 27°48′N latitude; that is about the same latitude as Sarasota, Florida. As proven by Dorcas et al., Burmese will not survive above 33°N latitude in South Carolina.

Referring to the papers of Avery et al. (2010) [two survivors of nine Burmese pythons in outdoor enclosures in a USDA facility in Gainesville, Florida] and Mazzotti et al. (2010) [only one of ten radio-tagged pythons living in the ENP survived], Dorcas and others make the statement that "some snakes also *adopted* behaviors that allowed them to survive the unusually cold temperatures" [italics ours]. The "behavior" that the two survivors in Avery et al. (2010) "adopted" was to stay inside their artificially heated shelter. The surviving free-ranging radio-tagged python in Mazzotti et al. (2010) was rescued as it was dying from the cold and revived in captivity by the researchers. One wonders what Dorcas and others consider to be the inheritable behaviors that these survivors might possess. Will Florida pythons evolve a strong innate urge to be radio-tagged by sympathetic researchers and find a heated kennel for shelter?

Barker and Barker (2010a) point out that a serious and fundamental flaw in the climate-matching analyses of Rodda et al (2008, 2009) and in Reed and Rodda (2009) is their use of "mean monthly temperatures" from the weather reporting stations as the data used in all climate-match analyses in those papers. The problems of the use of mean monthly temperatures in place of daily temperatures are detailed in Barker and Barker (2010a); the statements made there are convincingly corroborated by Dorcas et al. Figure 1 in Dorcas et al. well illustrates the problems of performing a climate match for reptiles using mean monthly temperatures, the point being that while the "climate" might appear suitable for a species, the daily weather may be completely hostile. Although it is probably unintended, this report of Dorcas et al. perfectly illustrates that the climate-matching analyses of Rodda et al. (2008, 2009) and Reed and Rodda (2009) are fundamentally flawed and invalid.

It is not difficult to infer from the discussion in this paper that the authors expected and, perhaps, even hoped that the ten pythons would survive their winter outdoors in Aiken, South Carolina. Like all invasion biologists studying the "python problem in Florida," they have strong incentives to support and continue the media hysteria that has been purposely created, based on countless unfounded statements and exaggerations, and supported by invalid research. The authors guarded the fact that all their pythons died until the recent online publication of this paper, nearly a year after the completion of the experiment. The research results completely contradict countless statements and

predictions made to the media by the authors and other invasion biologists. The timing of the release of the information past the close of the comment period (in mid-August 2010) for the proposed USFWS action to list nine constrictors as Injurious Wildlife suggests to us that there was purposeful intent to keep the results from being known to the committee that rules on the proposed action.

Further, it seems curious that in this report, authored by academics and published in a peer-reviewed journal, when 100% of the study animals in a research experiment died, that most of the discussion is devoted to just how pythons could evolve and change so that they could survive. The authors appear oblivious to the published facts that 400 miles to the south, the pythons in Gainesville also died in the cold; even further south, the radio-tagged pythons died in the ENP along with hundreds, maybe thousands, of wild Burmese pythons. Nevertheless, in an online article of the *Christian Science Monitor*, posted 24 October 2010, Michael Dorcas is quoted as stating that "there certainly is a possibility that pythons could survive in South Carolina and possibly even farther north." That may be the hope of an invasion biologist, but it is a denial of his own research.

Literature Cited

Angilletta, M. J., Jr., P. H. Niewiarowski and C. A. Navas. 2002. The evolution of thermal physiology in ectotherms. Journal of Thermal Biology 27:249-268.

Avery, M. L., R. M. Engeman, K. L. Keacher, J. S. Humphrey, W. E. Bruce, T. C. Mathies and R. E. Mauldin. 2010. Cold weather and the potential range of introduced Burmese pythons. Biol. Invas.: DOI 10.1007/s10530-010-9761-4.

Barker, D. G. 2008. Will they come in out of the cold? Bull. Chicago Herp. Soc. 43(6):93-97.

Barker, D. G., and T. M. Barker. 2010a. A flawed USGS report on giant constrictors. Bull. Chicago Herp. Soc. 45(2):25-28.

Barker, D. G., and T. M. Barker. 2010b. The distribution of the Burmese python, *Python bivittatus* in China. Bull. Chicago Herp. Soc. 45(5):86-88.

Barker, D. G., and T. M. Barker. 2010c. A critique of the analysis used to predict the climate space of the Burmese python in the United States by Rodda et al. (2008/2009) and Reed and Rodda (2009). Bull. Chicago Herp. Soc. 45(6):97-106.

Bertoli C. I., A. C. Scannapieco, P. Sambucetti and F. M. Norry. 2010. Direct and correlated responses to chill-coma recovery selection in *Drosophila buzzatii*. Entomologia Experimentalis et Applicata 134:154-159.

Bortolus, A. 2008. Error cascades in the biological sciences: The unwanted consequences of using bad taxonomy in ecology. Ambio 37(2):114-118.

Cota, M. 2010. Geographical distribution and natural history notes on *Python bivittatus* in Thailand. The Thailand Natural History Museum Journal 4(1):21-30.

Groombridge B., and R. Luxmoore. 1991. Pythons in South-east Asia. A review of distribution, status, and trade in three selected species. A report to CITES Secretariat, Lausanne.

Hoffmann A. A., and A. R. Weeks. 2007. Climatic selection on genes and traits after a 100 year-old invasion: A critical look at the temperate-tropical clines in *Drosophila melanogaster* from eastern Australia. Genetica 129:133-147.

Jacobs, H. J., M. Auliya and W. Böhme. 2009. Zur Taxonomie des Dunklen Tigerpythons, *Python molurus bivittatus* Kuhl, speziell der Population von Sulawesi. Sauria 31(3):5-16.

Mazzotti, F. J., M. S. Cherkiss, K. M. Hart, S. Snow, M. R. Rochford, M. E. Dorcas and R. Reed. 2010. Cold-induced mortality of invasive Burmese pythons in south Florida. Biological Invasions. doi 10.1007/s10530-010-9797-5.

Pyron, R. A., F. T. Burbrink and T. J. Guiher. 2008. Claims of potential expansion throughout the U.S. by invasive python species are contradicted by ecological niche models. PLoS ONE 3(8): e2931. doi:10.1371/journal.pone.0002931.

Reed, R. N., and G. H. Rodda. 2009. Giant constrictors: biological and management profiles and an establishment risk assessment for nine large species of pythons, anacondas, and the boa constrictor. U.S. Geological Survey Open-File Report, 302 pages.

Rodda, G., C. S. Yarnevich and R N. Reed. 2008. What parts of the U.S. mainland are climatically suitable for invasive alien pythons spreading from Everglades National Park? Biological Invasions. doi:10.1007/s10530-008-9228-z.

Rodda, G., C. S. Yarnevich and R N. Reed. 2009. What parts of the U.S. mainland are climatically suitable for invasive alien pythons spreading from Everglades National Park? Biological Invasions 11:241-252.

Schleip, W., and M. O'Shea. 2010. Annotated checklist of the recent and extinct pythons (Serpentes, Pythonidae), with notes on nomenclature, taxonomy, and distribution. Zookeys 66:29-80. doi: 10.3897/zookeys.66.683.

Wall, F. 1921. Ophidia Taprobanica or the snakes of Ceylon. Colombo: H. R. Cottle, Government Printer, Ceylon.

Whitaker, R., and A. Captain. 2004. Snakes of India, The field guide. Chennai, India: Draco Books.

Zhao, Er-Mi, and K. Adler. 1993. Herpetology of China. Salt Lake City, Utah: Society for the Study of Amphibians and Reptiles.

Bull. Chicago Herp. Soc. 45(12):190-191, 2010

Notes on Reproduction of Gray's Chinese Gecko, *Gekko chinensis* (Squamata: Gekkonidae) from Hong Kong, China

Stephen R. Goldberg
Biology Department, Whittier College
Whittier, CA 90608
sgoldberg@whittier.edu

Abstract

Gonadal histology of *Gekko chinensis* from Hong Kong, China, was investigated. Males were undergoing spermiogenesis in both July and December (the two months examined) suggesting a prolonged reproductive cycle. Mean clutch size for nine *G. chinensis* females was 2.0. Two females with oviductal eggs and concomitant yolk deposition and one female with a corpus luteum and concomitant yolk deposition indicates *G. chinensis* females produce multiple egg clutches in the same reproductive season.

Gray's Chinese gecko, *Gekko chinensis*, is known from southern China and possibly northern Vietnam (Uetz et al., 2010). It is distributed throughout Hong Kong (Karsen et al., 1986). There is andecdotal information on the reproduction of *G. chinensis* in Karsen et al. (1986) and Simon et al. (2006). The purpose of this note is to add information on the reproductive biology of *G. chinensis* from a histological examination of gonads as part of a series of studies on gecko reproductive cycles. The first information on the testicular cycle is presented. Minimum sizes for reproduction in males and females of *G. chinensis* are given. The reproductive cycle of *G. chinensis* is compared with that of other gekkonids. Information on reproduction such as clutch size, sizes at sexual maturity and timing of the reproductive cycle may be useful in elucidating taxonomic relationships as well as in formulating conservation policy.

A total of 26 *G. chinensis* from Hong Kong, China, including 7 males (mean snout–vent length, SVL = 55.3 mm ± 8.6 SD, range: 45–64 mm) and 19 females (mean SVL = 62.3 mm ± 5.0 SD, range: 52–70 mm were examined from the herpetology collection of the Peabody Museum of Natural History, Yale University, New Haven, Connecticut, USA. Geckos were collected 1997–2004.

For histological examination, the left testis was removed from males and the left ovary was removed from females. Enlarged follicles (> 4 mm length) or oviductal eggs were counted. Tissues were embedded in paraffin and cut into sections of 5 µm. Slides were stained with Harris hematoxylin followed by eosin counterstain (Presnell and Schreibman, 1997). Slides of testes were examined to determine the stage of the spermatogenic cycle. Slides of ovaries were examined for the presence of yolk deposition or corpora lutea. Histology slides were deposited in the YPM herpetology collection. An unpaired *t*-test was used to compare male and female mean body sizes (SVL) using Instat (vers. 3.0b, Graphpad Software, San Diego, CA).

The following YPM specimens of *G. chinensis* from Hong Kong, China were examined: Lantau Island: 9644, 9647, 9650, 9663, 9171-9173, 9175, 9176, 9178-9184, 9643, 9646, 9649, 9652, 11880-11882, 14713; Chek Lap Kok Island: 9939; Tung Ping Chau Island: 9658.

Two stages in the testicular cycle were observed: (1) Recrudescence which occurs prior to sperm formation (= spermiogenesis); spermatogonia and primary spermatocytes predominate; (2) Spermiogenesis, characterized by groups of spermatozoa and metamorphosing spermatids lining the lumina of the seminiferous tubules. Two males from July and two from December were undergoing spermiogenesis. The smallest male to undergo spermiogenesis (YPM 14713) measured 55 mm SVL and was from July. Two smaller males from December (YPM 9650 = 45 mm SVL and YPM 9644 = 51 mm SVL) and one smaller male from January (YPM 9663 = 45 mm SVL) exhibited recrudescence and were classified as subadults. It is not known at what size they would have commenced spermiogenesis.

The mean female body size (SVL) was significantly larger than that of males (unpaired *t*-test, $t = 2.6$, $df = 24$, $P = 0.016$). Data on stages in the female ovarian cycle are summarized in Table 1. There is histological evidence that multiple egg clutches are produced (Table 1) as two females with oviductal eggs exhibited concurrent yolk deposition for a subsequent clutch. Also, one female with a corpus luteum from a previous

Table 1. Monthly stages in the ovarian cycle of *Gekko chinensis* from Hong Kong, China.

Month	*n*	Quiescent	Early yolk deposition	Follicles > 3 mm	Oviductal eggs	Oviductal eggs and yolk deposition	Corpus luteum
June	3	0	1	1	0	1	0
July	14	4	1	3	3	1	2*
December	2	2	0	0	0	0	0

* One female contained a corpus luteum from a previous clutch and concurrent yolk deposition for a subsequent clutch.

clutch was undergoing yolk deposition for a subsequent clutch. Mean clutch size for 9 females was 2.0. No female reproductive activity was recorded in December but my sample is too small (n = 2) to suggest seasonality in the *G. chinensis* ovarian cycle. The smallest reproductively active female (YPB 9179) measured 59 mm SVL and contained two oviductal eggs with concurrent yolk deposition for a subsequent clutch. Two somewhat smaller females (YPB 9652, SVL = 58 mm) from July and (YPB 9647, SVL = 52 mm) from December contained quiescent ovaries.

The small clutches of two eggs exhibited by *G. chinensis* is typical for many other gekkonid species (Vitt, 1986). While my monthly samples are incomplete, the presence of males undergoing spermiogenesis at opposite ends of the year (July and December) suggests an extended period of sperm formation. The congener *Gekko smithii* was shown to exhibit year-round reproduction in Southeast Asia (Goldberg, 2009). Examination of additional monthly samples of *G. chinensis* are needed to further elucidate the reproductive biology of this gecko.

Acknowledgments

I thank Jacques Gauthier and Gregory Watkins-Colwell (YPM) for permission to examine *G. chinensis*.

Literature Cited

Goldberg, S. R. 2009. Reproduction in Smith's green-eyed gecko, *Gekko smithii* (Squamata: Gekkonidae). Texas Journal of Science 61:225-228.

Karsen, S. J., M. W. Lau and A. Bogadek. 1986. Hong Kong amphibians and reptiles. Hong Kong: An Urban Council Publication.

Presnell, J. K., and M. P. Schreibman. 1997. Humason's animal tissue techniques, 5th Edit. Baltimore, Maryland: Johns Hopkins Press.

Simon, K., F. Chan, K. Cheung, C. Ho, F. Lam and W. Tang, Herpetofauna Working Group. 2006. The geckos of Hong Kong. Hong Kong Biodiversity, Agriculture, Fisheries and Conservation Department Newsletter 13:1-8.

Uetz, P., J. Hošek and J. Hallermann. 2010. The Reptile Database, Zoological Museum, Hamburg, Germany. http://www.reptile-database.org, accessed November 2010.

Vitt, L. J. 1986. Reproductive tactics of sympatric gekkonid lizards with a comment on the evolutionary and ecological consequences of invariant clutch size. Copeia 1986(3):773-786.

Bull. Chicago Herp. Soc. 45(12):192-194, 2010

What We Missed at the November Meeting

John Archer
j-archer@sbcglobal.net

I'm sure that Jason Hood gets tired of references to his height. However, people notice when you're 6'8", and that tends to be the most commonly described trait. Having known Jason for several years, his height is no longer the first thing I think about. He hails from Florida where he developed an interest in snakes that has not left him. He knows a lot about snakes, though he admits that his knowledge of any animal with legs is considerably less. I have field herped, taken trips to zoos, worked on projects, and frequently traded good-natured insults with Jason. At least they were good-natured on my part; Jason may have been serious. I have also served on the CHS board with Jason when he was vice-president. He has been a dynamic member of the Chicago Herpetological Society, taking on many tasks and performing them with expertise and dependability. His sharp wit and self-deprecation sometimes hide his keen mind and intense seriousness about things he considers important. His straight talk can be grating but is almost never incorrect. He visited Peru last summer and obligingly presented a tale of his adventure at our November meeting. I wasn't at that meeting but I did receive a recording and his slides. Herewith is my impression of those.

There were not a lot of professionally posed photos in Jason's talk and not a lot of academic information dropped into the presentation, though there were plenty of great photos and interesting bits. This was a travelogue with a herp theme by someone who was traveling to the jungle for the first time and whose enthusiasm came through with every word. Jason presented us with the highs and lows of traveling to a remote jungle site to look for snakes, though, with encouragement from Bryan Suson, he did look at insects and he couldn't avoid mouse opossums and bats. Jason has always been pretty open about his likes and dislikes and his sense of humor coupled with a strong sense of timing allowed the audience to laugh along with him as he took us on his trip.

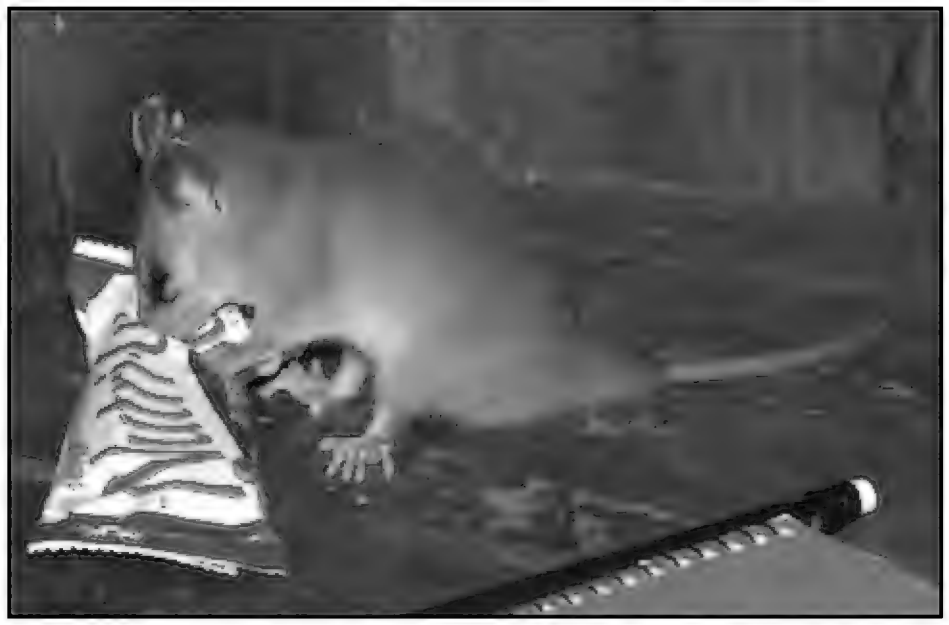
His trip took place the last part of June and the first week of July, and while he only spent five days in the jungle he managed to squeeze much into those five days. He started out with maps of Peru and Lima, followed by pictures of the terrain as viewed from the arrival flight into Puerto Maldonado on the east side of the Andes. Photos showed a shrunken river in the middle of jungle, a demonstration of the drought that was plaguing the Amazon jungle. Jason was on this trip as a field assistant for Fauna Forever Tambopata (http://faunaforever.org/fft/index.html), a Peruvian conservation organization monitoring the Tambopata Nature Preserve. He was accompanied by his fiancée Barbara.

Jason's humor began with the photo of a canopied motorboat (desirable river transport to avoid sunburn) versus a series of photos of an open motorboat (less desirable river transport) with a woman bailing (much less desirable river transport). In spite of traveling so far and so long, upon arrival at the lodge he immediately left his fiancée for a short 20-minute walk through the jungle, returning two-and-a-half hours later to an unamused Barbara. Pictures of the insects he discovered on his stroll filled the screen, and pictures of the turnip-tailed geckos (*Thecadactylus rapicauda*) he found soothed Barbara somewhat upon his return and encouraged her to go with him again that night. Geckos are her favorites. He demonstrated his concept of the ideal field herping partner as he showed us a photo of Barbara's hand next to a huge pink-toed tarantula. He needed something to show its size and all he had to do was ask. My respect for his fiancée grows with each of his tales.

"Barbara, I need a size reference. Do you mind?" Jason's fiancé handles extreme requests. Photograph by Jason Hood.

According to Jason, you do not want to voyage for three hours in this boat. Fortunately, his boat was covered and had no need for bailing. Photograph by Jason Hood.

A picture of a cute mouse opossum chewing on a snack bar showed a nightly companion that could not be outwitted by any hiding place they used for Jason's treats. Jason talked of waking the first morning exhausted from the traveling, hiking, and late night interruptions, thinking of staying in bed just a little longer and opening his eyes to see a bat hanging from the ceiling of his room. He got up. Too much cool stuff to see!
He found a few more neat bugs on his own before he was handed his first snake by some of the researchers returning from an overnight expedition. Several pictures of this gorgeous arboreal whip snake (*Chironius exoletus*) popped up. Lots of yellows and greens and blues decorated this obligingly posing snake. That night he found his first snake, one that he had on



Natives are always appreciative when brought gifts. Photograph by Jason Hood.

Waking up to this means you're not in Kansas, Toto. Photograph by Jason Hood.

A whip snake that poses (*Chironius exoletus*). Photograph by Jason Hood.

Yellow-tailed cribo (*Drymarchon corais*). Photograph by Barbara Nieri, Jason's fiancé, who actually brought snakes to his sickbed.

A sick Jason holding a sick rainbow boa (*Epicrates cenchria*) that had earlier been envenomated by a mussurana (*Clelia clelia*). Photograph by Barbara Nieri.

It was a big mussurana that bit the rainbow boa. Photograph by Barbara Nieri.

A species Jason was hoping to see. They're common, but really cool. Blunt-headed tree snake (*Imantodes cenchoa*). Photograph by Barbara Nieri.

his wish list. Though a common species, Jason and we were enthralled by his discovery of a blunt-headed tree snake (*Imantodes cenchoa*) with its really long thin body and big round eyes. Not bad for his first solo find.

When Jason finally accompanied the researchers on their transects, he found the pace too slow and the finds too few. Common leaf litter frogs (species unknown) and tree runner lizards (*Plica plica*) did not satisfy his lust for snakes, but he did show us engaging pictures of more blunt-headed tree snakes, including a blond *Imantodes lentiferus*. They eat tree frogs and lizards. Jason showed several pictures of a gorgeous three-inch-long iridescent snake of the genus *Atractus*, which turned out to be one of his favorite finds.

But the find of the trip was spotted by Jason while working a transect. Jason showed a slide as an example of the photo he took while extremely excited. It was mostly black. But after calming enough to work his camera, he took several beautiful photos of an eight-foot-long bushmaster (*Lachesis muta*)! That find might have made up for the food poisoning that kept him in bed for the next day and a half. Fortunately for us Barbara wasn't ill and we got to view some of her photography, including a rainbow boa (*Epicrates cenchria*) that had been attacked by a mussurana (*Clelia clelia*). A picture of the attack was included although taken by the birders who found it, as were pictures taken by Barbara of an ill Jason holding the boa and a

Jason's sharp eyes picked up this little guy in the leaf litter (*Atractus* sp.) Photograph by Jason Hood.

The find of the trip. Bushmaster (*Lachesis muta*). Photograph by Jason Hood.

gorgeous yellow-tailed cribo (*Drymarchon corais*). Who can beat a fiancée that will actually bring snakes to your sick bed for you?

Jason ended with a few pictures of creative transportation in the town of Puerto Maldonado. Scooters carrying four people and hauling impossible loads are not unusual.

It was good of Jason to share his trip with us. I would hope that I could bring the same enthusiasm, endurance, and effort to any of my field trips, but I don't think I'm able to bring his sense of humor and I know my wife won't bring snakes to my sick bed.

One more thing you should know about Jason: beginning in January he's the president of your society. I am moving to vice-president. I appreciate the honor you have done me in allowing me to be president and look forward to seeing Jason lead your society to greater heights. I know he'll do a great job.

That wasn't a pun.

Two gas cylinders held on by bungee cords. Need a ride? Photograph by Jason Hood.

Bull. Chicago Herp. Soc. 45(12):195-197, 2010

Herpetology 2010

In this column the editorial staff presents short abstracts of herpetological articles we have found of interest. This is not an attempt to summarize all of the research papers being published; it is an attempt to increase the reader's awareness of what herpetologists have been doing and publishing. The editor assumes full responsibility for any errors or misleading statements.

CHRONOLOGY OF AN EXTINCTION

H. Grillitsch [2010, Herpetozoa 23(1/2):25-50] reports that 80 to 90 years after its discovery, the Hungarian meadow viper *Vipera* (*Pelias*) *ursinii rakosiensis* Méhely, 1893, is no longer found in the Vienna Basin and the lowlands of northeast Burgenland where it was not rare in the beginning of the 20th century. The most recent voucher is from 1973, the youngest observation that came with a photograph was said to refer to a record in 1984; both originate from localities in Burgenland, whereas the latest Lower Austrian specimen at the Natural History Museum was caught in 1936. The decline of the Austrian populations conspicuously preceded that in Hungary. This process is well documented and traceable on the basis ofthe materials (literature and museum data) reviewed. There is no indication for any surviving individuals in Austria or that recolonization attempts could be successful in this country at present.

NORTHERN MAP TURTLE HABITAT SELECTION

M.-A. Carrière and G. Blouin-Demers [2010, Canadian Journal of Zoology 88(9):846-854] note that understanding habitat use of declining species is essential for their management and successful recovery. The authors examined habitat selection at multiple spatial scales by northern map turtles (*Graptemys geographica*), a species at risk, in the St. Lawrence Islands National Park, Ontario, Canada. At the scale of the home range, map turtles generally avoided deep water (>2 m) and selected home ranges in waters <1 m deep. Importantly, turtles used home ranges with significantly more natural than developed shoreline. At the scale of the location, adult females used deep water more often and males preferred areas with surface cover. Management efforts should implement regulations concerning further shoreline development.

DECLINE OF THE NORTHERN SPIDER TORTOISE

R. C. J. Walker [2010, Herpetologica 66(4):411-417] note that the northern Madagascar spider tortoise (*Pyxis arachnoides brygooi*), is endemic to the coastal Mikea forests of southwest Madagascar. Very little is known of *P. a. brygooi*'s ecology; however, it is suspected that the range is now very fragmented, with remaining populations facing significant threats from habitat destruction and poaching for food and the pet trade. A line-transect survey was undertaken that systematically surveyed the suspected historical range of this subspecies. The results were incorporated into a GIS database, which revealed that the distribution was confined to 20.5% of the suspected historical range, across three fragmented populations covering 499.6 km^2. It appears that a zone of intergradation has developed in a transitional area between the southern range of *P. a. brygooi* and the northern range of *P. a. arachnoides*. The results of this survey are currently being applied to management plans for newly gazetted protected areas in the region, in an effort to safeguard these relatively small remaining populations.

AMERICAN TOADS AND POTATO BEETLES

G. Boiteau and P. C. McCarthy [2010, Canadian Journal of Zoology 88(5):468-478] note that it has been suggested that the stripes on the elytra of the adult Colorado potato beetle (*Leptinotarsa decemlineata*); Coleoptera: Chrysomelidae) and the red coloration of the larvae are aposematic characters warning predators of their distastefulness as prey. The role of stripes and red color in determining the avoidance behaviour of the American toad (*Bufo americanus* = *Anaxyrus americanus*); Anura: Bufonidae) for the Colorado potato beetle was investigated in a series of laboratory tests. The behavior of toads exposed to wild Colorado potato beetles was compared with that of toads exposed to genetic mutant Colorado potato beetles without elytral stripes. Tests confirmed the distastefulness of adult and larval stages and demonstrated the development of prey avoidance (cessation of feeding in spite of hunger) combined or not to behavioral displays where the toad plants down, crouches, and turns away or shows wincing, prey dropping, and mouth gaping after snapping at the beetle. However, toads showed the same response to mutant adult beetles without stripes and to mutant larval beetles without the red color as to wild adult beetles with stripes and to wild red larvae. Results indicate that the stripes and the red coloration of the Colorado potato beetle do not constitute aposematic characters for the toad.

ESCAPE RESPONSE IN JUVENILE LIZARDS

C. A. Braun et al. [2010, Herpetologica 66(4):418-424] note that escape theory is a well-known conceptual framework proposed to predict adaptive behavior patterns of free-ranging prey animals with respect to predator avoidance. Escape-theory models are based on the premise that prey should adopt behavior that balances predation risk incurred by remaining in a chosen location against the cumulative fitness costs resulting from fleeing such locations. Ectotherms are expected to be more vulnerable when their locomotory abilities are diminished at lower ambient temperatures, and risk to prey is expected to increase with the intensity of threat posed by potential predators. The authors conducted field experiments involving approach by a simulated predator (a human observer) to test both the influence of substrate temperature and the intensity of threat on escape behavior in free-ranging juvenile collared lizards, *Crotaphytus collaris*. As predicted by theory, flight initiation distance was negatively correlated with substrate temperature. Results also supported the prediction that the intensity of juvenile responses should increase with perceived threat intensity. Juveniles fled or hid in more trials when they were approached directly; direct approach resulted in subjects responding when the predator stimulus was farther away, and for trials in which hatchlings fled, they moved farther when approached directly. Taken together, these results indicate that juvenile collared lizards alter their behavior with respect to increased risk in a manner that is consistent with the predictions of contemporary escape theory.

FORAGING IN TURBID WATER

A. M. Grosse et al. [2010, Copeia 2010(3):463-467] note that the effect of increased turbidity levels on aquatic organisms is an increasing concern for aquatic biologists. Recent studies show reduced foraging efficiency of drift-feeding fish species, which are highly visual predators, with increasing water turbidity. Similar to fish, many aquatic turtle species are highly visual aquatic predators that may be negatively affected by increasing water turbidity. The authors used eastern painted turtles (*Chrysemys picta*) to test the hypothesis that increasing water turbidity would decrease prey capture efficiency. They classically conditioned eight *C. picta* to search for a food item when presented with a novel stimulus, and then measured the time it took each turtle to find a prey item under a range of 26 turbidity levels (= 40 nephelometric turbidity units, NTUs) presented in a random order. All turtles were successfully trained within 29 days to search for the food item when presented with the stimulus. Turbidity had no effect on the probability of successful prey capture. Turtles located the prey item in 97% of trials regardless of turbidity level. Turbidity had a minor effect on time to prey capture, increasing from an average of 30 seconds at a turbidity level of 2 NTUs to 55 seconds at 40 NTUs. Overall, turbidity level explained approximately 2% of the variation in the time it took a turtle to locate a prey item. These results contrast sharply with a nearly identical study, which showed that turbidity explained 70% and 90% of the variation in drift-feeding fish reactive distance and prey capture success respectively, and that a turbidity of only 9–10 NTUs reduced fish foraging performance by 50%. The authors suggest that resilience to turbidity effects on foraging proficiency among generalist species may be important to understanding their persistence in more degraded aquatic environments compared to more specialized species.

DISTINCTIVENESS OF NORTHERN CRICKET FROGS

K. B. Beauclerc et al. [2010, Canadian Journal of Zoology 88(6):553-566] note that peripheral populations of widespread species are often considered unworthy of conservation efforts; however, they may be adapted to the conditions found at the range edge and are therefore important to the future evolutionary potential of the species. Blanchard's cricket frog (*Acris blanchardi*) is widespread and abundant throughout the central United States, but is declining at the northern edge of its range. To assess the distinctiveness and conservation value of the northern populations, the authors investigated the spatial genetic structure and phylogeography of this anuran using mitochondrial control region sequences. Analysis of 479 individuals identified 101 haplotypes, with relatively low nucleotide diversity. Two moderately divergent clades were found. One was restricted to the southwest, which was probably a refugium during the Pleistocene, whereas the other occurred primarily across the north and is likely the result of postglacial colonization. The genetic distinctiveness of northern populations indicates the potential for adaptive differences of individuals in this region relative to those in the south. The authors therefore conclude that conservation efforts are justified for the declining northern populations of Blanchard's cricket frog, and use the spatial genetic structure described in this paper to develop specific recommendations for this anuran.

ROUND-TAILED HORNED LIZARD ESCAPE DECISIONS

W. E. Cooper, Jr., and W. C. Sherbrooke [2010, Canadian Journal of Zoology 88(10):1003-1010] note that flight initiation distance (predator–prey distance when escape begins) increases as predation risk increases. Prey should have longer flight initiation distance when their background, movement, or current posture reduces crypsis. Flight initiation distance of ectotherms may increase at lower body temperature to compensate for slower running speed. However, for cryptic prey, fleeing might increase the probability of being detected. The round-tailed horned lizard (*Phrynosoma modestum*) is eucryptic and resembles a small stone. The authors predicted that flight initiation distance by *P. modestum* is shorter among stones than on uniform sand. Because movement and upright posture disrupt crypsis, they predicted that flight initiation distance is greater after movement and when standing than when still and lying on the ground. As predicted, flight initiation distances were shorter on a rocky than sandy area, when lying flat than standing, and while immobile than after moving. Running speed and flight initiation distance were measured to determine relationships among body temperature, speed, and escape decisions. Running speed and flight initiation distance were reduced at lower body temperature, suggesting that crypsis reinforced by immobility is more advantageous than longer flight initiation distance for cool, slow lizards. The lizards adjusted escape decisions to current effectiveness of crypsis and escape ability.

DIET AND FAMILY VS. AGE OF MATURATION

D. J. Byars et al. [2010, Herpetologica 66(4):456-463] note that one of the most important life-history traits for organisms is age at first reproduction. The benefits of early reproduction often trade off with survival of the female and/or with her growth. Prey availability has been shown to be important in determining strategies for adult trade-offs of reproductive traits in snakes, but its impact on maturity has rarely been studied. The authors examined the role of energy intake on the brown house snake, *Lamprophis fuliginosus*, on trade-offs in growth, maturity, and reproductive traits. Six female full-sibling offspring from 10 wild-caught dams were raised on either a high diet (50% of their body mass per week) or a low diet (20% per week) until they mated and laid eggs. Both diet and family influenced growth rates. Forty-eight out of 60 snakes mated, and 37 of these laid eggs within the 20 months. Mean days to first mating was nearly 100 days earlier for animals on the high diet. Within each treatment females did not differ from each other in mating age. The females on the low diet mated at a smaller size than the females on the high diet and laid fewer eggs. However, when adjusted by female snout–vent length as a covariate clutch size did not differ between diets. These results suggest there is a minimum size and age below which females will not ovulate. Females with faster growth may bypass that minimum even though earlier reproduction would produce a faster generation time. The trade-off with increased reproductive output in these bigger females may offset the benefits of an earlier maturity and produce equivalent fitness. Finally, evidence is provided that age of maturity may have an additive genetic effect, i.e., may be heritable and thus evolvable based on a significant family effect.

RISK ASSESSMENT VS. HIDING TIME

W. E. Cooper, Jr., and D. S. Wilson [2010, Herpetologica 66(4): 425-431] note that during encounters with predators, prey that flee into refuges decide how long to hide. Refuge use theory predicts that hiding time increases as the risk of emerging increases. Lizards that escape by autotomizing their tails incur costs, including temporary decrease in speed and loss of ability to use autotomy. Thus, risk of being captured upon emergence is greater after autotomy. Also, a predator that captures a prey may later be assessed as posing greater threat. The authors predicted that hiding time increases after a lizard has been captured or has undergone autotomy. A previous study of striped plateau lizards (*Sceloporus virgatus*) showed that the proportion of lizards that entered refuges increased after autotomy but not after earlier capture. To examine unstudied effects of autotomy and capture on hiding time, a 2 × 2 factorial field experiment was conducted with handling and autotomy as factors. The four groups were (1) unhandled intact controls; (2) unhandled autotomized; (3) captured (and handled) intact, but not autotomized; and (4) captured, handled and autotomized. Because entering cool refuges entails costly decrease in body temperature, hiding times are shorter in cooler refuges. This effect was controlled statistically by conducting analyses of covariance incorporating difference in air temperature inside and outside refuges as the covariate. As predicted, autotomy and handling led to longer hiding times. However, handling affected hiding time only in intact lizards. These results add autotomy and capture to risk factors known to affect hiding time, augmenting a growing body of knowledge supporting the hypothesis that trade-offs between costs of emerging and remaining in a refuge guide decisions about hiding time.

GOPHER TORTOISE DEMOGRAPHICS

J. N. Styrsky et al. [2010, Herpetologica 66(4):403-410] note that because gopher tortoises (*Gopherus polyphemus*) occupy high-value lands in the southeastern United States, are declining throughout their range, and stir public passion when they are entombed through currently legal take, refined conservation measures for this species are needed. Of particular interest is a determination of how many individuals constitute a population and what sized areas are required by such populations so that animals currently in harm's way might be moved to designated reserve areas. The authors use surveys of burrows of gopher tortoises from a large sample of areas of differing sizes to test for a relaxation of the linear relationship between area and number of burrows expected at the edge of a population of gopher tortoises. For measures of burrow abundance, some data are from sites on which estimates were based on transect samples; on other sites, complete counts were made. The relationship between area and abundance was elevated for transect samples compared to similar data from complete counts, indicating that transect data yield inflated counts when extrapolated over large areas. For complete counts, the data indicate a threshold point at which a linear relationship between area and abundance ends and a loss of this relationship for larger areas begins. This threshold point suggests that, on average, populations of gopher tortoises consist of 444 burrows, cover 755 ha, and contain 240 tortoises. These figures describe features of tortoises inhabiting a variety of lands that differ in current management goals and past land-use history. The results suggest that many current reserve areas for gopher tortoises are likely to be too small. The results also provide an example of how key conservation variables can be generated for long-lived species.

FRACTIONAL EGG SIZE HYPOTHESIS TESTED

N. B. Ford and R. A. Seigel [2010, Herpetologica 66(4):451-455] note that a critical life-history trait for organisms is how energy is allocated among the individual offspring they produce. One way of examining the expected trade-off between number of offspring and offspring size is by examining how females respond to different amounts of resources. It has been predicted that females with increased energy uptake should allocate these resources to extra eggs if this does not decrease the size of the other offspring from an optimal value. However, the trade-off of egg size and number is more problematic when considering species that have small clutches (and very large eggs), because changing clutch size requires a large investment per additional egg (the fractional egg size hypothesis). Thus, species with large eggs and small clutches may be more likely to apportion additional energy into increasing offspring size than to increasing clutch size. This prediction has been tested rarely in reptiles. In this study, the authors placed females of the diadem snake, *Spalerosophis diadema* (a species that produces very large eggs in small numbers), on either high- or low-energy diets and then recorded reproductive traits after oviposition. As predicted, there was a negative correlation between clutch size and mean egg mass. Females on high-energy diets did not modify clutch size but produced larger eggs relative to those on low-energy diets. However, there was no difference in variance in egg size between diets. The data therefore support one of the predictions from the fractional egg size hypothesis (larger eggs rather than larger clutch sizes) but not the second prediction that egg size should be more variable in smaller clutches.

AGGRESSION DURING NEST GUARDING

J. K. Tornick [2010, Herpetologica 66(4):385-392] notes that defending young against intruders is a potentially risky behavior, and is energetically costly. Yet female eastern red-backed salamanders, *Plethodon cinereus*, guard their clutches for many weeks and aggressively defend eggs against predators and conspecifics. The author examined the effect of clutch age, clutch size, and attendant size on the level of aggression attained during nest defense by staging conspecific invasions of nests of brooding female *P. cinereus* in the laboratory. It was predicted that older and larger clutches would elicit increased aggression from the guarding females, and that larger females would be more aggressive when defending. The females were significantly more aggressive when guarding older clutches (6 wk postoviposition) than younger clutches (4 wk postoviposition). However, there was no difference in aggressive behavior when females guarded large (10-egg) or small (4-egg) clutches. There was also no relationship between body size and level of aggression; females were aggressive regardless of their size. These results suggest that females are able to evaluate the age (or developmental stage) of their eggs and adjust expenditure accordingly, but are not differentially responsive to clutch size.

Unofficial Minutes of the CHS Board Meeting, November 12, 2010

The meeting was called to order at 7:42 P.M. at the Schaumburg Public Library. Board member Jenny Vollman was absent.

Officers' Reports

Recording Secretary: Cindy Rampacek read the minutes from the October 15 board meeting, several corrections were made, and the minutes were accepted..

Treasurer: The October financial report was presented, discussed and accepted.

Membership Secretary: Mike Dloogatch read a list of memberships expiring this month.

Publications Secretary: Aaron LaForge was reminded that the online coupon for ReptileFest needs to be updated.

Sergeant-at-arms: The attendance at the October meeting was 47.

Committee Reports

Shows:
- SEWERFest, November 14.
- Notebaert, December 4, 5.
- Great Lakes Pet Expo, February 5, 2011

Bob Bavirsha mentioned that Bob Henderson had told hin that Snake Day, November 6, was one of the best attendance days ever at the Milwaukee Public Museum. Cindy passed along Bob's appreciation to the CHS members who helped out.

Old Business

Elections and speaker: John Archer will not be at the November meeting. As vice-president and also chair of the Nominating Committee, Jason Hood will be running the entire show. Jason is also the speaker. Cindy has offered to take over Sergeant-at-arms duties for Dick Buchholz, who will also not be present.

New Business

The Chicago Park District legal department sent an email. They will be sponsoring symposia on various environmental concerns, which they hope eventually to be student-run. They are reaching out to a variety of groups with environmental concerns. Their first symposium will be discussing invasive species. It will be hosted in spring. Jason will keep an eye on it.

Doug Holmes of the Central Illinois Herp. Soc.contacted John Archer. He is looking into sponsoring a herping trip to the tropics in May or June 2012.

Jason Hood discussed the chance of advertising ReptileFest through a mass mailing program that UIC offers. This brought up a few more ideas in reaching out more to local colleges. Jason will also check to see if Rick is on point for advertising.

Round Table

Jessica had a great time at the Garfield Park show. She borrowed a milksnake from Dick and it hung on her camera the entire show.

Deb Krohn had a good time at the Milwaukee Public Museum Snake Day. She really loved the food in the museum cafeteria.

Nancy Kloskowski found homes for all of her baby checkered garter snakes. The albino she kept has already taken 2 pinkies.

Mike mentioned that grant memberships and inquiries are starting.

Dick warned that parking will be rough at the next Notebaert weekend show because of the green market being held near the loading dock. The best strategy will be to pull into the circle, run in your animals and park across the street.

The meeting was adjourned at 8:38 P.M.

Respectfully submitted by recording secretary Cindy Rampacek

Index to Scientific Names of Amphibians and Reptiles for Volume 45 (2010)

January 1-24
February 25-40
March 41-56

April 57-72
May 73-96
June 97-112

July 113-124
August 125-136
September 137-152

October 153-172
November 173-184
December 185-204

Acanthocercus atricollis 91
Acontias plumbeus 90
Acris
  blanchardi 196
  crepitans 155
    blanchardi 134
Actinemys marmorata 94
Adelophis 81
Adelphicos 81
Agalychnis callidryas 115
Agkistrodon
  contortrix 53, 154, 155
    contortrix 130
    phaeogaster 130
Agrionemys 1
Alligator mississippiensis 115
Amblyrhynchus cristatus 165
Ambystoma
  barbouri 128
  jeffersonianum 158
  maculatum 157
  tigrinum 93, 157-160
Ameiva
  bifrontata 125-126
  festiva 63
  leptophrys 62-63
  quadrilineata 63
  undulata 63
Amphisbaena heterozonata 168
Amphiuma means 110
Anaxyrus
  americanus 128, 195
  canorus 168
  fowleri 169
  punctatus 129
  valliceps 129
Anolis nebulosus 175
Anotheca spinosa 108, 109
Antaresia
  childreni 114, 115
  maculosa 115
Apalone 154, 155
  ferox 115
  mutica 154
  spinifera 154, 155
    spinifera 128
Arthroleptis 134
Aspidoscelis 175
  communis 175
  hyperythra 169
  scalaris gularis 44
  tigris 169
Aspidura 81
Atractaspis bibroni 91
Atractus 81, 194
Barisia ciliaris 42
Basiliscus vittatus 115
Batrachoseps
  attenuatus 53
  major 169
Boa constrictor 13, 14, 114, 115
Boiga irregularis 113, 146
Bolitoglossa equatoriana 164
Bothrops asper 133
Bufo 154
  americanus 29, 154, 155, 195
  boreas 169
  fowleri 155
  nebulifer 129
  valliceps 129
Caiman crocodilus 163, 168
Calamaria 81
Caretta caretta 134
Carphophis 73
  amoenus 74, 75, 76, 155, 156
  vermis 74, 75, 76
Ceratophrys ornata 115
Chamaeleo
  calyptratus 115
  dilepis 91
  jacksonii 115
  senegalensis 115
Chelonia mydas 54, 69, 132, 180, 181
Chelydra serpentina 115, 155
Chersina angulata 94
Chilomeniscus cinctus 175
Chironius exoletus 32, 192, 193
Chiropterotriton priscus 42
Chlamydosaurus kingii 115
Chrysemys picta 63, 134, 196
Clelia clelia 193, 194
Clemmys guttata 63, 70
Clonophis kirtlandii 73, 74, 75, 78
Cnemidophorus sexlineatus 154, 155
Coluber 175
  constrictor 44, 92, 130, 154, 155, 169
    anthicus 130
  mentovarius 175
  taeniatus girardi 44
  viridoflavus 93
Coniophanes fissidens 32
Conolophus 164, 165
Contia
  longicaudae 110
  tenuis 110, 133
Corallus caninus 115
Cordylus giganteus 91
Craugastor augusti 42, 175
Crocodylus
  moreletii 115
  niloticus 91
Crotalus 58
  adamanteus 69, 130
  horridus 94, 128, 156
  lepidus
    castaneus 44
    lepidus 44
    morulus 44
  molossus
    molossus 44
    nigrescens 44
  pricei miquihuanus 42
  scutulatus scutulatus 42
  totonacus 44
  willardi 129, 130
Crotophytus collaris 195
Cryptobranchus
  alleganiensis 92, 128, 129
Ctenosaura pectinata 175
Cyclura
  cychlura 47
    cychlura 47, 93
    figginsi 48
Dendrophidion vinitor 32
Dermochelys
  coriacea 69, 132, 133, 179, 180
Desmognathus
  aeneus 92
  ocoee 92
  organi 150
  wrighti 92, 150
Diadophis
  punctatus 73, 74, 75, 78, 79, 81, 154, 155
    edwardsii 78
    punctatus 78
Dispholidus typus 91
Dolichophis caspius 150
Dracaena guianensis 164
Drymarchon
  corais 193, 194
  melanurus erebennus 44
Drymobius
  margaritiferus 32
    margaritiferus 44
Elaphe obsoleta 154, 155, 157
Elgaria multicarinata 169
Emydoidea blandingii 70
Epicrates
  cenchria 115, 193, 194
  granti 110
Eretmochelys
  imbricata 54, 69, 134, 180
Erythrolamprus
  bizona 32
  mimus 32
Eryx colubrinus 115
Eublepharis macularius 113, 115
Eumeces 154, 155
  fasciata 154, 155
  laticeps 154, 155
Eunectes
  murinus 115
  notaeus 115
Eurycea 154, 155
  cirrigera 154, 155
  longicauda 154, 155
Farancia erytrogramma 130
Furcifer pardalis 115
Gastrophryne olivacea 44
Gekko
  chinensis 190-191
  gecko 113, 115
  smithii 191
Geochelone 165
  carbonaria 115, 167
  denticulata 115
  elegans 114, 115
  nigra 34
  sulcata 115
Geophis
  brachycephalus 32-33
  godmani 32
Gerrhonotus infernalis 42, 43
Glyptemys muhlenbergii 37
Gopherus
  agassizii 68, 130
  polyphemus 142, 197
Graptemys 186
  flavimaculata 132
  geographica 195
  gibbonsi 132
  oculifera 132
  pearlensis 132
  pulchra 132
Gyalopion canum 44
Haplocercus ceylonensis 81
Hemachatus haemachatus 89
Hemidactylus
  frenatus 47, 113, 114, 115
  mabouia 113, 114, 115
  palaichthus 118-119
  turcicus 114
Hemitheconyx caudicinctus 115
Heosemys depressa 133

Heterodon
nasicus 128
platirhinos 169
Hierophis viridoflavus 93
Holbrookia approximans 44
Homopus 1
signatus signatus 52
Hydromorphus concolor 32
Hyla
arenicolor 175
chrysoscelis 154, 155
cinerea 129
punctata 164
versicolor 80
Hyperolius marmoratus taeniatus 91
Hypopachus variolosus 175
Hypsiglena
jani texana 42
torquata 175
Ichnotropis capensis 91
Iguana
delicatissima 47, 48
iguana 47, 49, 53, 115
Imantodes
cenchoa 194
lentiferus 194
Incilius nebulifer 169
Indirana beddomii 52
Kinosternon flavescens 44, 52
Lacerta bilineata 93
Lachesis muta 194
Lampropeltis
getula 115, 132, 155, 169
mexicana thayerii 44
pyromelana 115
triangulum 115
annulata 44
Lamprophis fuliginosus 115, 196
Lepidochelys olivacea 69
Leptodeira septentrionalis 32, 44
Leptotyphlops dulcis 44
Lichanura trivirgata 115
Lithobates 78, 80
berlandieri 44
catesbeianus 113, 114
forreri 175
subaquavocalis 130
Macrochelys temminckii 94, 167
Malaclemys
terrapin 141
macrospilota 142
Mantella aurantiaca 133
Masticophis 175
flagellum 54
lateralis 169
Mastigodryas melanolomus 32
Medaestia 1
Melanosuchus niger 168
Microlophus 164
Micruroides euryxanthus 175
Micrurus nigrocinctus 32
Morelia
spilota 115
viridis 115
Naja
mossambicus 91
nigricollis 90
pallida 110
Natator depressus 132, 179
Natrix
maura 93
natrix 93
Necturus maculosus 154
Nerodia
erythrogaster neglecta 29-31
sipedon 29, 154, 155
insularum 78
Neurergus
crocatus 150
strauchii strauchii 150
Neusticurus ecpleopus 125
Ninia
maculata 32
sebae 32
Nucras 90
Oligosoma smithi 22
Ollotis
nebulifer 129
occidentalis 175
Oreophryne ezra 70
Oxybelis 49
aeneus 47
Paleosuchus palpebrosus 115
Pantherophis
emoryi 44, 114, 115
guttata 114, 115
obsoletus 130
spiloides 130
Pelias 195
Pelophylax ridibundus 150
Phrynobatrachus 134
Phrynomantis bifasciatus 90
Phrynosoma
cornutum 68, 93
coronatum 169
modestum 196
orbiculare 42
Phyllodactylus lanei 175
Physignathus cocincinus 115
Pituophis
catenifer 169
deppei
deppei 42
jani 42
Platyceps elegantissimus 68
Platysaurus broadleyi 70
Plethodon
cinereus 78, 80, 169, 197
glutinosus 154, 155
Plestiodon
brevirostris pineus 42, 43
callicephalus 175
obsoletus 44
Podarcis muralis 93
Pogona vitticeps 115
Potamites ecpleopus 125
Pseudacris
crucifer 130, 154, 155
illinoensis 130
regilla 168
Pseudemys 143
concinna suwanniensis 141
Pseudocordylus capensis 70
Pseudoeurycea galeanae 42, 43
Pseudotyphlops philippinus 81
Ptychozoon kuhli 115
Python
bivittatus 26, 86-88, 97-106, 187-189
bivittatus 26
progschai 26
curtus 115
molurus 16, 26, 97-106, 114, 187
bivittatus 115, 187
molurus 27, 97
natalensis 91
regius 14, 115
reticulatus 114, 116
sebae 12, 13, 116
Pyxicephalus adspersus 89
Pyxis
arachnoides
arachnoides 195
brygooi 195
Ramphotyphlops braminus 114
Rana 78, 80, 154, 155
catesbeiana 29, 154, 155
clamitans 154, 155
pipiens 29
sphenocephala 154, 155
sylvatica 29, 154, 155, 157
Rhabdops bicolor 81
Rhacodactylus ciliatus 116
Rhadinaea hesperia 175
Rhadinea decorata 32
Rhinella marina 42
Rhinocheilus lecontei lecontei 44
Rhinophrynus dorsalis 44
Rhinophis 81
Salvadora grahamiae lineata 44
Scaphiopus
couchii 44
holbrookii 154, 155
Sceloporus 174, 175
cautus 42
clarkii 175
consobrinus 44
cyanogenys 175
grammicus disparilis 42
horridus 175
jarrovii 92
magister 173
marmoratus 44
melanorhinus 175
minor 42
occidentalis 169
parvus 42
poinsetii 44
samcolemani 42, 43
scalaris 42
torquatus 175
binocularis 42
undulatus 154, 155
uniformis 175
virgatus 92, 197
Scincella lateralis 79, 154, 155
Scotophis spiloides 92
Seminatrix pygaea 73, 74, 75, 79
Shinisaurus crocodilurus 167
Siphonops annulatus 164
Siren
intermedia 69
lacertina 110
Sistrurus
catenatus
catenatus 68
edwardsi 53
miliarius streckeri 130
Smilisca baudinii 44
Sonora michoacanensis 175
Spalerosophis diadema 197
Spea multiplicata 42, 43
Sphenodon punctatus 22, 94
Stenorrhina freminvillii 32
Sternotherus minor minor 142
Stigmochelys
pardalis 22
babcocki 37
Storeria
dekayi 73, 74, 75, 79
dekayi 22
texana 44
hidalgoensis 44
occipitomaculata 81, 155, 156
Syrrhophus
cystignathoides campi 44
guttilatus 42
modestus 175
Telescopus
fallax 70, 150
semiannulatus semiannulatus 90, 91
Terrapene
carolina 155, 157
bauri 142
carolina 52
ornata 128
Testudinella 1
Testudo
(Agrionemys) horsfieldii 1
graeca 4, 114, 116

hermanni 1, 4
horsfieldii 1-9
horsfieldii 1
kazachstanica 1
rustamovi 1
marginata 150
Thamnophis
brachystoma 73, 74, 75, 77, 78, 82
butleri 73, 74, 75, 78, 79, 80
elegans 81
eques virgatenius 42
exsul 42
gigas 70
marcianus 81
marcianus 44
proximus 44
pulchrilatus 44
radix 81
sirtalis 22, 73, 74, 75, 78, 80, 81, 92, 130, 154, 155
parietalis 168
Thecadactylus rapicauda 192
Tiliqua scincoides 116
Trachemys
scripta 114, 155, 156
elegans 116
Trachischium 81
Trachylepis aurata 70
Trimorphodon
biscutatus 175
tau 175
Tropidoclonion lineatum 73, 74, 80
Tupinambis merianae 116
Uropeltis 81
Uroplatus fimbriatus 116
Urosaurus
bicarinatus 175
ornatus 42, 92
Uta stansburiana 169
Varanus
acanthurus 116
albigularis 116
exanthematicus 113, 116
mertensi 116
niloticus 113, 116
ornatus 116
panoptes 116
rosenbergi 150
salvator 116
timorensis 116
Vijayachelys silvatica 37
Vipera
aspis 93
ursinii rakosiensis 195
Virginia 73
pulchra 74, 75, 76, 77
striatula 74, 75, 76, 77
valeriae 74, 75, 76, 77, 82, 155
Xantusia
bolsonae 173
henshawi henshawi 175
sanchezi 173-176
vigilis 173, 174
Xenodon rabdocephalus 32
Zamenis situla 150

Bull. Chicago Herp. Soc. 45(12):201-202, 2010

Author–Title Index for Volume 45 (2010)

January 1-24 **April 57-72** **July 113-124** **October 153-172**
February 25-40 **May 73-96** **August 125-136** **November 173-184**
March 41-56 **June 97-112** **September 137-152** **December 185-204**

Archer, B. What You Missed at the June Meeting 121
Archer, J. What You Missed at the December Meeting 18
Archer, J. What You Missed at the January Meeting 34
Archer, J. What You Missed at the February Meeting 47
Archer, J. Showtime 50
Archer, J. What You Missed at the March Meeting 66
Archer, J. What You Missed at the April Meeting 89
Archer, J. What You Missed at the May Meeting 107
Archer, J. What You Missed at the July Meeting 128
Archer, J. What You Missed at the August Meeting 141
Archer, J. What You Missed at the September Meeting 163
Archer, J. What You Missed at the October Meeting 179
Archer, J. What We Missed at the November Meeting 192
Barker, D. G., and T. M. Barker Review: *Giant Constrictors: Biological and Management Profiles and an Establishment Risk Assessment for Nine Large Species of Pythons, Anacondas, and the Boa Constrictor* by Robert N. Reed and Gordon H. Rodda 10
Barker, D. G., and T. M. Barker A Flawed USGS Report on Giant Constrictors 25
Barker, D. G., and T. M. Barker The Distribution of the Burmese Python, *Python bivittatus*, in China 86
Barker, D. G., and T. M. Barker A Critique of the Analysis Used to Predict the Climate Space of the Burmese Python in the United States by Rodda et al. (2008, 2009) and Reed and Rodda (2009) 97
Barker, D. G., and T. M. Barker The Tympanum: Herpetoculture in the 21st Century 144
Barker, D. G., and T. M. Barker A Review of: Dorcas, M. E., J. D. Willson and J. W. Gibbons. 2010. *Can Invasive Burmese Pythons Inhabit Temperate Regions of the Southeastern United States?* Biological Invasions. Online at doi 10.107/s10530-010-9869-6 187
Barker, T. M. See Barker, D. G.
Campos-Múzquiz, L. See Lazcano, D.
Chiszar, D., H. M. Smith and T. Chiszar Lewis and Clark: Herpetologists, Naturalists and National Icons 57
Chiszar, T. See Chiszar, D.

Christoffel, R. Book Review: *The Last Tortoise: A Tale of Extinction in Our Lifetime* by Craig B. Stanford 161

Cochran, P. A. Book Review: *The Old-time River Rats: Tales of Bygone Days along the Wild Mississippi* by Kenny Salwey . . . 127

Contreras-Balderas, A. J. See Contreras-Lozano, J. A.

Contreras-Lozano, J. A., D. Lazcano, A. J. Contreras-Balderas and P. A. Lavín-Murcio Notes on Mexican Herpetofauna 14: An Update to the Herpetofauna of Cerro El Potosí, Galeana, Nuevo León, México 41

Cruz-Sáenz, D., and D. Lazcano Notes on the Herpetofauna of Western Mexico 3: Herpetofauna Sympatric with *Xantusia sanchezi* in an Oak Forest of Jalisco, Mexico 173

Duke, S. T. Minimum Habitat Requirements of the Copper-bellied Watersnake (*Nerodia erythrogaster neglecta*) 29

Fogel, D. The Tympanum: Dollars and Sense 166

Fogel, G. Alligator Farms in the Workplace: A Guide for Beginners 177

Goldberg, S. R. Note on the Testicular Cycle of the Gray Earth Snake, *Geophis brachycephalus* (Serpentes: Colubridae), from Costa Rica 32

Goldberg, S. R. Notes on Reproduction of the Delicate Ameiva, *Ameiva leptophrys* (Squamata: Teiidae) from Costa Rica 62

Goldberg, S. R. Note on Reproduction of the Antilles Leaf-toed Gecko, *Hemidactylus palaichthus* (Squamata: Gekkonidae) from Brazil and Venezuela 118

Goldberg, S. R. Note on the Reproductive Cycle of Cope's Ameiva, *Ameiva bifrontata* (Squamata: Teiidae), from Peru 125

Goldberg, S. R. Notes on Reproduction of Gray's Chinese Gecko, *Gekko chinensis* (Squamata: Gekkonidae) from Hong Kong, China 190

Gray, B. S. Distribution of Native and Exotic Earthworms in the Eastern United States: Implications for the Ecology of Vermivorous Snakes 73

Hahn, M. L Letter 166

Lavín-Murcio, P. A. See Contreras-Lozano, J. A.

Lavín-Murcio, P. A. See also Lazcano, D.

Lazcano, D. See also Contreras-Lozano, J. A.

Lazcano, D. See also Cruz-Sáenz, D.

Lazcano, D., R. Mendoza-Alfaro, L. Campos-Múzquiz, P. A. Lavin-Murcio and M. Quiñónez-Martínez Notes on Mexican Herpetofauna 15: The Risk of Invasive Species in Northeastern Mexico 113

Lee, D. S., and K. Smith Testudostan: Our Post-Cold War Global Exploitation of a Noble Tortoise 1

Lee, D. S. Highland Terrapins and Turtle-free Zones: A Look Back at an Earlier Generation's Views on Turtles 63

Lee, D. S. Book Review: *Stormy's Return* by Bob Palmatier 119

Lee, D. S. The Shameful Shell Games Continue 185

Luhring, T. M. Predation by a Green Heron (*Butorides virescens*) on a Greater Siren (*Siren lacertina*) 33

Mendoza-Alfaro, R. See Lazcano, D.

Miller, R. W. Notes on the Distribution of *Ambystoma tigrinum* in Maryland and Virginia 157

Palis, J. G. Herpetofauna of Illinois Audubon Society's Lusk Creek Tract, Pope County, Illinois, with Comparisons to Thompson (1972) 153

Quiñónez-Martínez, M. See Lazcano, D.

Rajan, Y. T. I Smell . . . ADVENTURE! Jasper's Snake-hunting Sixth Sense 137

Rivera, R. R. Letter 46

Ray, J. Letter 166

Smith, H. M. See Chiszar, D.

Smith, K. See Lee, D. S.

Zeh, D. Letter 21

#1 In Reptile Lighting

UVB LAMPS

Our UVB Lamps emissions last up to **5 times longer** than comparable Chinese made UVB lamps!

Reptisun 5.0
Available in 15, 18, 25 and 36 watts

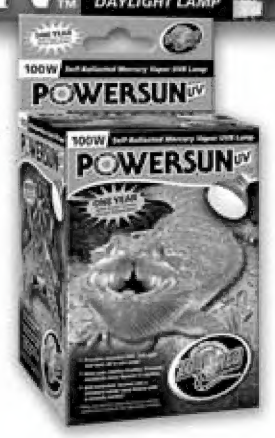
Reptisun 10.0
Available in 15, 18, 25 and 36 watts

Naturesun
(formerly Reptisun 2.0)
Available in 15, 18, 25 and 36 watts

ZOO MED LABORATORIES, INC.
3650 Sacramento Dr.
San Luis Obispo, CA 93401 U.S.A.
Phone: 805-542-9988
email: zoomed@zoomed.com

www.zoomed.com

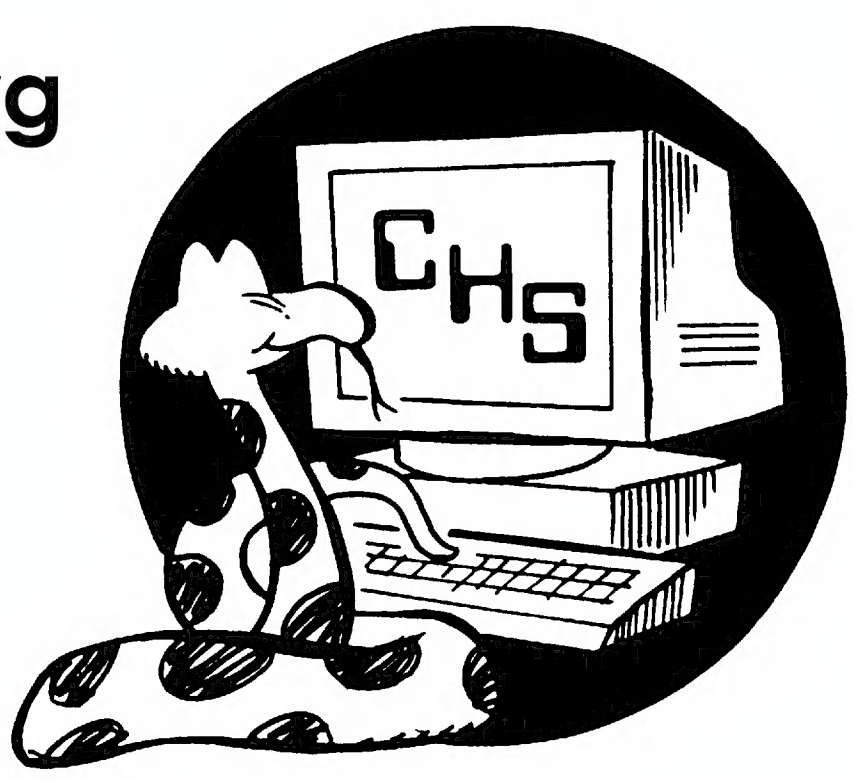
Powersun UV Self-Ballasted Mercury Vapor UVB Lamp
Provides essential UVA, UVB light and heat, all in one lamp.
Available in 100w and 160w.



Reptisun 5.0 and 10.0 Compact Fluorescent UVB Bulbs
Self ballasted lamps.
Available in 5.0 and 10.0 UVB.

Next time you surf the WorldWide Web, crawl, run, slither, slide, jump, or hop over to the CHS web site!

www.chicagoherp.org



You'll find:

- **Announcements**
- **CHS animal adoption service**
- **CHS events calendar & information**
- **Herp news**
- **Herp links**
- **Meeting/guest speaker information**
- **Photos of Illinois amphibians & reptiles**
- **Much, much more!**

Chicagoherp.org is accepting applications for banner advertisements or links from herpetoculturists and manufacturers of herp-related products. Visit the site and contact the webmaster for details on how you can sponsor CHS!

Advertisements

For sale: rats and mice—pinkies, fuzzies and adults. Quantity discounts. Please send a SASE for pricelist or call Bill Brant, *THE GOURMET RODENT*, 12921 SW 1st Rd, Ste 107-434, Jonesville, FL 32669, 352-472-9189, E-mail: GrmtRodent@aol.com.

For sale: from **The Mouse Factory**, producing superior quality, frozen feeder mice and rats. Our mice and rats are vacuum-packed to greatly extend freezer life by reducing freezer burning and preserving vitamin and nutrient content. We feed our colony a nutrtionally balanced diet of rodent chow, formulated especially for us, and four types of natural whole grains and seeds. For a complete price list please visit our web site, www.themousefactory.com. We accept all major credit cards, PayPal or money orders. Call us **toll-free** (800) 720-0076 or send us an e-mail at info@themousefactory.com. Write us at PO Box 85, Alpine TX 79831.

For sale: **high quality frozen feeders**. Over a decade of production and supply. Seven sizes of mice availabe: small newborn pinks up to jumbo adults. Prices start at $25 per 100. Feeders are separate in the resealable bag, not frozen together. Low shipping rates. Free price list. Kelly Haller, 4236 SE 25th Street, Topeka KS 66605, (913) 234-3358 evenings and weekends.

For sale: Rats—live or frozen. I breed rats for my collection of boas so only top quality lab chow and care will do, I'm now offering surplus animals for sale. Located in far south suburbs of Chicago. Only orders of 20 or more please, no large rats will be available. For current availability and prices, please e-mail Steve at smuys@sbcglobal.net.

For sale: *Australian Geographic* magazines. These are 128–146 pages full of authoritative, well-researched articles about Australia, wonderfully illustrated with excellent photos. Interesting ads, book reviews, news of Australia—great reading for Australophiles. Most of the following issues lack accompanying maps/posters. April–June 1997—contains 12-page article on black snakes by Rick Shine including research results by author; July–September 1999—16 pp. on 6 species of blue-tongue lizards including the pygmy and a detailing of the life history of the shingleback by Geordie Torr; January–March 2010—articles on Wilsons Prom and life on a remote Northern Territory cattle station; October–December 1991—articles on butterflies (including full color poster), Groote Eylandt, and the Roper River; April–June 2009—butterflies of tropical Queensland (including color poster), Kimberley rock art, and the Australia national reserve system. $18 per issue. $3 postage for orders under $25, free for $25 or more. William R. Turner, 7395 S. Downing Circle West; Centennial, CO 80122.; e-mail: toursbyturner@aol.com.

For sale: Trophy quality jungle carpet, diamond-jungle, and jaguar carpet pythons. Website: moreliatrophyclub.com E-mail: junglejohn@tds.net.

Herp tours: **Costa Rica herping adventures**. Join a small group of fellow herpers for 7 herp-filled days. We find all types of herps, mammals, birds,and insects, but our target is snakes. We average 52 per trip, and this is our 10th year doing it. If you would like to enjoy finding herps in the wild and sleep in a bed at night with air-conditioning, hot water and only unpack your suitcase once, instead of daily, then this is the place to do it. Go to our web-site http://hiss-n-things.com and read the highlights of our trips. Read the statistics of each trip and visit the link showing photos of the 40 different species we have found along the way. E-mail at jim.kavney@gmail.com or call Jim Kavney 305 664-2881

Herp tours: **The Ultimate Bushmaster Experience**: five days in and out one of the world's hotspots, the Atlantic Rainforest in Brazil, with safety and confort, and also some work in a captive breeding center, guided by a specialist in the genus *Lachesis*. Groups of six people. Please contact Rod Souza, M.D lachesisbrasil@hotmail.com

Herp tours: The beautiful Amazon! Costa Rica from the Atlantic to the Pacific! Esquinas Rainforest Lodge, the Osa Peninsula, Santa Rosa National Park, and a host of other great places to find herps and relax. Remember, you get what you pay for, so go with the best! GreenTracks, Inc. offers the finest from wildlife tours to adventure travel, led by internationally acclaimed herpers and naturalists. Visit our website <http://www.greentracks.com> or call (800) 892-1035, E-mail: info@greentracks.com

Line ads in this publication are run free for CHS members—$2 per line for nonmembers. Any ad may be refused at the discretion of the Editor. Submit ads to: Michael Dloogatch, 6048 N. Lawndale Avenue, Chicago IL 60659, (773) 588-0728 evening telephone, (312) 782-2868 fax, E-mail: MADadder0@aol.com

ReptileFest 2011, April 9, 10

UPCOMING MEETINGS

The next meeting of the Chicago Herpetological Society will be held at 7:30 P.M., Wednesday, December 29, at the Peggy Notebaert Nature Museum, Cannon Drive and Fullerton Parkway, in Chicago. **This meeting will be a holiday party.** The CHS will provide soft drinks and snacks. If you would like to bring something edible to share with the group, you are invited to do so. If you would like to bring an animal to show off to the group, you are encouraged to do that as well. This will be a chance to socialize all evening and get to know your fellow members a little better.

At the January 26, 2011, meeting **Ray Pawley** will speak on "A New, One-of-a-kind Chicago Exotarium? Why Not?" Ray has the distinction of having been the only zoologist/curator who has managed the extensive herp collections at both Lincoln Park and Brookfield Zoos. Moreover, following his departure first from Lincoln Park and then from Brookfield, Ray witnessed the closure of both highly popular reptile houses. In Ray's view, these closings leave an enormous void in Chicagoland and as we know, Nature abhors a vacuum. So should we. Ray has served as a Zoo exhibits consultant from time to time at Lincoln Park Zoo, Shedd Aquarium and other Chicago area facilities during his tenure at Brookfield Zoo over the decades and these assignments have often provoked new ideas about creating a new, stand-alone herpetological facility in Chicago. Ray will share these ideas with you.

The regular monthly meetings of the Chicago Herpetological Society take place at Chicago's newest museum—the **Peggy Notebaert Nature Museum**. This beautiful building is at Fullerton Parkway and Cannon Drive, directly across Fullerton from the Lincoln Park Zoo. Meetings are held the last Wednesday of each month, from 7:30 P.M. through 9:30 P.M. Parking is free on Cannon Drive. Many CTA bus routes are within walking distance.

Board of Directors Meeting

Would you like to have input into the decisions that determine how the Chicago Herpetological Society runs? If so, mark your calendar for the next board meeting, to be held at 7:30 P.M., January 14, in the adult meeting room on the second floor of the Schaumburg Township District Library, 130 S. Roselle Road, Schaumburg.

The Chicago Turtle Club

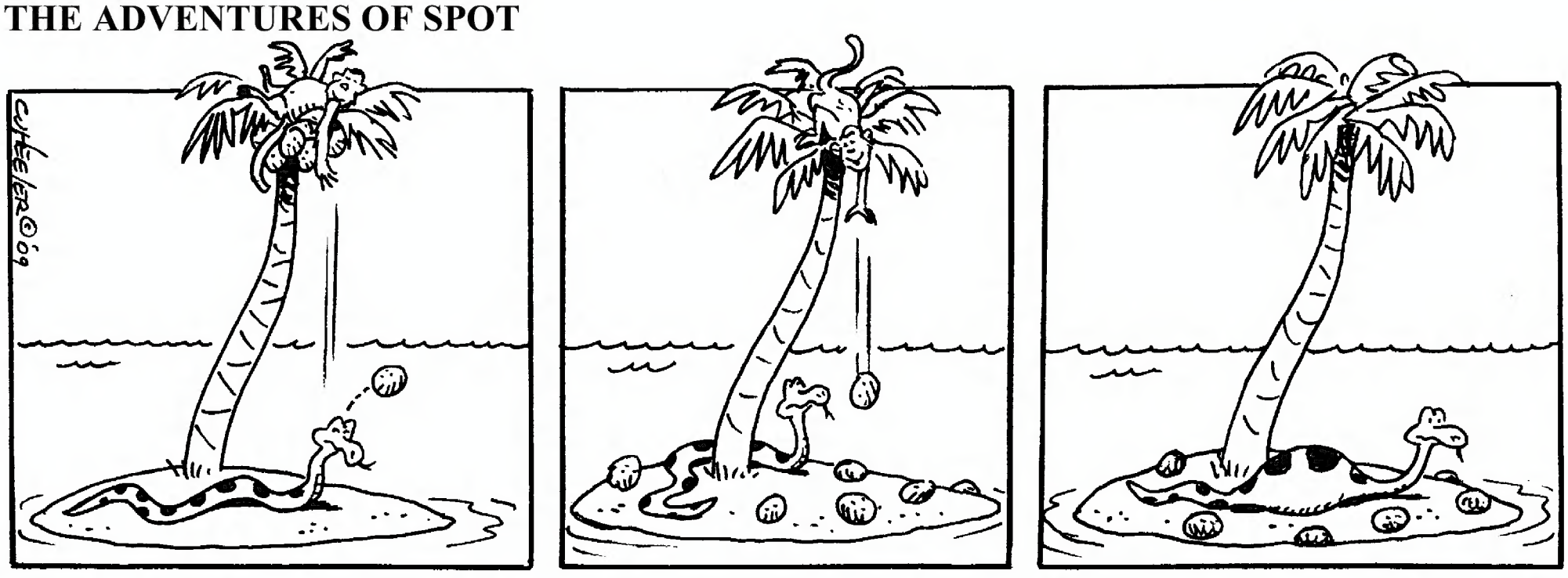
The monthly meetings of the Chicago Turtle Club are informal; questions, children and animals are welcome. Meetings normally take place at the North Park Village Nature Center, 5801 N. Pulaski, in Chicago. Parking is free. For more info visit the CTC website: http://chicagoturtle.org/.

ELECTION RESULTS

As a result of the elections held November 24, 2010, the following officers and members-at-large will serve on the CHS Board of Directors for the year 2011.

President:	Jason Hood	Membership Secretary:	Mike Dloogatch
Vice-president:	John Archer	Sergeant-at-arms:	Greg Brim
Treasurer:	Andy Malawy	Members-at-large:	Jim Foster
Recording Secretary:	Cindy Rampacek		Lawrence Huddleston
Corresponding Secretary:	Deb Krohn		Linda Malawy
Publications Secretary:	Aaron LaForge		Jenny Vollman

THE ADVENTURES OF SPOT



Periodicals Postage
Paid at Chicago IL

CHICAGO HERPETOLOGICAL SOCIETY

Affiliated with the Chicago Academy of Sciences

2430 North Cannon Drive • Chicago, Illinois 60614